Module 3
Dust Wipe Sampling

Objectives

- Demonstrate how to take a dust wipe sample
- Identify 3 surfaces where dust wipes are collected
- Define single-surface and composite sampling

Module 3: Dust Wipe Sampling 1

Overview of Module 3

- Part 1: Background
- Part 2: How to Collect Samples
- Part 3: Composite Samples

Module 3: Dust Wipe Sampling 2

Purpose of Dust Wipe Sampling

- Determine if lead levels exceed guidelines or standards
- Demonstrate contractor has removed hazardous levels of lead-contaminated dust

Module 3: Dust Wipe Sampling 3

Why Collect Samples

- Tiny bits of lead can contaminate
- You cannot tell by looking at dust if it contains lead
- Even experienced contractors fail dust wipe tests

Module 3: Dust Wipe Sampling 4

What a Dust Wipe Measures

- Total amount of lead in an area
  - ✔Federal guidelines and standards use this type of measurement
- Lead present at the moment
  - ✔Lead levels can change
  - ✔Does not tell you about past or future levels

Module 3: Dust Wipe Sampling 5

Where to Collect Dust Samples

- Floors - all jobs
- Interior window sills & troughs
  - ✔Interior sill if work was done on windows
  - ✔Interior sill or trough for Federally-assisted housing
- *See Module 5 for more detail*

Module 3: Dust Wipe Sampling 6

Wipe Sampling Materials

- Disposable wipes
- Gloves
- Centrifuge tubes or equivalent
- Templates
- Masking or painters tape
- Measuring tape
- Sample collection forms
- Markers, trash bags, labels, pens

Module 3: Dust Wipe Sampling 7

Single-Surface Dust Wipes

- One wipe from 1 surface
- Measures total lead in sample area
- Wait 1 hour after work is done before collecting sample

Module 3: Dust Wipe Sampling 8

How to Collect Samples

Step 1: Lay out the sample area
Step 2: Prepare the tubes
Step 3: Put on clean gloves
Step 4: Wipe sample area
Step 5: Measure the sample area
Step 6: Clean-up

Module 3: Dust Wipe Sampling 9

Step 1: Lay Out Sample Area

- Use a template
  - ✔Durable material
  - ✔Floor is generally 12 in. by 12 in.
  - ✔Dimensions of interior window sill and trough templates vary in size

Module 3: Dust Wipe Sampling 10

Step 1:cont'd.

- Tape template to surface
- If no template, outline with tape
  - ✔Area must be at least 16 square inches (2 in. by 8 in.)
  - ✔Measure exact area *after* sample is taken.
- Do NOT touch area inside template

Module 3: Dust Wipe Sampling 11

Step 2: Prepare the Tubes

- Use clean tubes
- Label tube with ID number
- Record ID number on sample collection form
- Place tube near sample area
- Partially unscrew tube cap

Module 3: Dust Wipe Sampling 12

Step 3: Put on Clean Gloves

- Use disposable gloves
- Use new gloves for each sample
- Do NOT touch anything besides the wipe after putting on the gloves

Module 3: Dust Wipe Sampling 13

Step 4: Wipe the Sample Area

- See **Field Guide,** step 4

- Same for carpet or bare floor.

Module 3: Dust Wipe Sampling 14

Step 4: cont'd.

- Sampling interior sills and troughs
  - ✔Use side-to-side "S" motions
  - ✔Do not touch other parts of the window
  - ✔Measure length and width of samples <u>after</u> wipe is done

Module 3: Dust Wipe Sampling 15

Step 5: Measure the Sample Area

- Measure width and length (unless template was used)
  - ✔Length of sill or trough between tape
  - ✔Tape across width of sill or trough
- Measure to 1/8 inch
- Record measurement on lab form

Module 3: Dust Wipe Sampling 16

Step 6: Clean Up

- Clean template with wipe, place in plastic bag
- Remove materials from site:
  - ✔Gloves, tape from floors & windows
  - ✔Put items in trash bag
  - ✔**NOT** in client's containers

Module 3: Dust Wipe Sampling 17

Common Mistakes

- Measurement error
- Contaminated wipe
- Contaminated gloves
- Contaminated sample area
- Sloppy recording

Module 3: Dust Wipe Sampling 18

Overview of Composite Dust Wipes

- Measures average lead on a surface
- Use separate composite samples for each dwelling unit
- Sample holds up to 4 dust wipes
  - ✔Do not use more than 4 wipes
  - ✔Do not mix samples from different types of surfaces

Module 3: Dust Wipe Sampling 19

Rules for Composite Samples

- Collect samples in rooms where work occurred
- Sample no more than 4 rooms
  - ✔Select rooms where children are likely to be
  - ✔Living room or playroom
  - ✔Youngest child's bedroom (smallest)
  - ✔Kitchen

Module 3: Dust Wipe Sampling 20

Rules for Composite Samples

- Check that the lab has experience analyzing composite samples
- Sample same area with each wipe - use templates where possible
  - ✔Floors - 12 inches by 12 inches
  - ✔Interior sills or troughs - use smallest sill or trough to set area

Module 3: Dust Wipe Sampling 21

Composite Sampling Procedures

- Outline all areas to wipe for composite before collecting sample
- Follow single wipe sampling procedures
- Use new wipe for each sub sample
- Not necessary to change gloves between sub samples

Module 3: Dust Wipe Sampling 22

Summary: Now You Can

- Identify 3 surfaces where dust wipes can be collected
- Demonstrate how to take a dust wipe sample
- Define single-surface and composite sampling

Module 3: Dust Wipe Sampling 23

Attachment 3-A: Model Sample Collection Form

Field Sampling Form for Dust

Name of Inspector: _____

Name of Property Owner: _____

Property Address: _____ **Apt.#** _____

Sample Number	Room (name of room used by owner)	Surface Type* (circle one)	Dimensions of Sample Area (in x in)	Area (ft^2)	Lab Results ($\mu g/ft^2$)
		FL WS WT			
		FL WS WT			
		FL WS WT			
		FL WS WT			
		FL WS WT			
		FL WS WT			
		FL WS WT			
		FL WS WT			
		FL WS WT			
		FL WS WT			
		FL WS WT			

* Surface types FL = Floor; WS = Window Sill; WT = Window Trough

Total number of samples on this page: _____

Date of Sample Collection: ___/___/___ Date Shipped to Lab: ___/___/___

Shipped by _____ Received by _____

Shipped by _____ Received by _____

Shipped by _____ Received by _____

Shipped by _____ Received by _____

Shipped by _____ Received by _____

Attachment 3-B: Model of Completed Sample Collection Form

Field Sampling Form for Dust

Name of Clearance Technician: Joe Smith

Name of Property Owner: Sally Jones

Property Address: 78 East Main St., Hammond, IN 89898 **Apt.#** 25

Sample Number	Room (name of room used by owner)	Surface Type* (circle one)	Dimensions of Sample Area (in x in)	Area (ft^2)	Lab Results ($\mu g/ft^2$)
98-1	Upstairs lg. bedroom	(FL) WS WT	12 × 12	1.00	
98-2	Upstairs lg. bedroom	FL (WS) WT	24 × 2.5	0.42	
98-3	Upstairs sm. bedroom	(FL) WS WT	12 × 12	1.00	
98-4	Upstairs sm. bedroom	FL (WS) WT	24 × 3.0	0.50	
98-5	Kitchen	(FL) WS WT	12 × 12	1.00	
98-6	Kitchen – above sink	FL (WS) WT	24 × 2.25	0.38	
		FL WS WT			
		FL WS WT			
		FL WS WT			

* Surface types FL = Floor; WS = Window Sill; WT = Window Trough

Total number of samples on this page: 6

Date of Sample Collection: 8/05/1999 Date Shipped to Lab: 8/07/1999

Shipped by Joe Smith Received by _____

Shipped by _____ Received by _____

Shipped by _____ Received by _____

Shipped by _____ Received by _____

Shipped by _____ Received by _____

3-C: Worksheet for Performing Mathematical Calculations From Fractions to Decimals

When recording the sample area on the dust wipe collection form, you may need to perform one or both of the following conversions: converting fractions to decimals and converting inches to square feet. To facilitate the mathematical calculations, fractions should always be converted to decimals first. Refer to the following Table of Common Conversions for assistance.

1. Converting Fractions to Decimals: Table of Common Conversions

Fraction	Decimal
1/8	0.125
2/8	0.250
3/8	0.375
4/8	0.500
5/8	0.625
6/8	0.750
7/8	0.875

Fraction	Decimal
1/4	0.250
2/4	0.500
3/4	0.750
1/3	0.333
2/3	0.667
1/2	0.500

2. Converting inches to square feet (ft^2)

If the area you sampled was not a square foot, you will need to convert it to this dimension. One foot equals 12 inches, and one square foot equals 144 square inches.

- Record the sample area in inches (in) as opposed to feet (ft).
- Convert the sample area to square inches (in^2). Round the number to a maximum of three decimal places.
- Divide the square inches by 144 to get square feet (ft^2). Round the number to a maximum of three decimal places.

Dimensions of sample area in inches (in)	Length = _____ in Width: _____ in
Multiply length times width to calculate et the area in square inches (in^2)	_____ in × _____in = _____ in^2
Divide the area in square inches (in^2) by 144 to calculate the area in square feet (ft^2).	_____ in^2 ÷ 144 =_____ft^2

3. Example: Convert an area with a length of 20 ½ inches and a width of 5 ¼ inches to square feet.

- Convert fractions to decimals: 20 $^1/_2$ in → 20.500 in 5 ¼ in → 5.250 in
- Calculate the area in square inches: 20.500 in × 5.250 in = 107.625 in^2
- Calculate the area in square feet: 107.625 in^2 ÷ 144 = 0.747 ft^2

Attachment 3-D: Dust Wipe Practicum Checklist

The following checklist lists the steps involved in taking a dust wipe sample. When someone is collecting dust samples, he/she should take each of these steps.

Step	Criteria	✓
1.	**Lay out sample area**	
	• Tapes down template; or	
	• Lays out sample area using tape	
2.	**Uses clean technique**	
	• Puts gloves on after set-up	
	• Has adequate method for handling wipe	
	• Removes wipe and shakes open correctly	
3.	**First swipe: side-to-side**	
	• Presses down firmly – palms & finger	
	• S-like motions	
	• Pressure adequate	
	• Wipes entire surface	
	• Does not cross boundary tape	
4.	**Second swipe: top-to-bottom**	
	• Folds in half, wipes on clean side	
	• Does not shake out contents during folding	
	• S-like motion	
	• Wipes entire surface	
	• Does not cross boundary tape	
5.	**Folds and inserts into tube**	
	• Does not touch other objects	
	• Does not lose surface debris	
6.	**Measures and records accurately**	
7.	**Completes form and labels tube**	

Dust Sampling Tools

Taping Template to Floor

Taping Window Sill

Labeling Sample Container

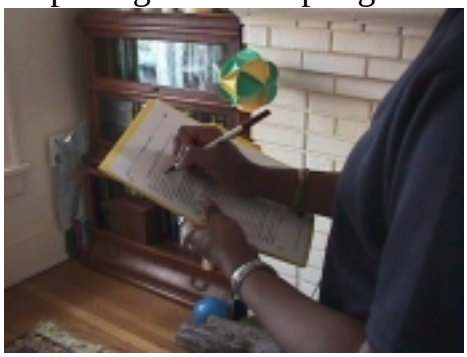
Wiping Sill

What's Wrong?

Measuring Window Sill

Module 3: Dust Wipe Sampling 7

Completing Dust Sampling Form



Module 3: Dust Wipe Sampling 8